undersides of floating weeds for snails, on the stems and leaves of water plants for freshwater limpets and in the mud at the bottom of streams and rivers for bivalves. A very useful freshwater collecting tool can be improvised by attaching a 6″ diam. gravy strainer to a broom handle.

Preservation and Transport.

As stated above it is initially planned that specimens should be sent to the National Museum of Victoria for identification and recording. For this it is probably best to send the specimens alive. Put the specimens from each locality into a non-crushable container in damp grass or leaf litter, pack this container well into a parcel, mark the parcel SCIENTIFIC SPECIMENS and mail it to—Dr. B. J. Smith, Curator of Invertebrates, National Museum of Victoria, Russell Street, Melbourne 3000.

Freshwater molluscs (snails and mussels) can be sent in the same way. **Do not** send freshwater molluscs in water as they die and rot very quickly. Do not put the locality label in the container with the live snails as they will probably eat it. Do not include green vegetable matter with live specimens. Attach the label to the outside of the inner container or put it inside in a plastic bag or other protective cover. Put in as much field data as possible.

If it is impossible or impracticable to send the material live then it should be narcotized and preserved before sending. Land snails and slugs are narcotized by drowning in freshwater. To assist this break a cigarette into a tumbler full of water and immerse the snails in this mixture for a few hours. Preferably preserve in 5% formalin neutralized with sodium carbonate or baking soda, or in 70% alcohol or methylated spirits. Put freshwater snails into a small container of water and gently stir in a few crystals of Menthol. Leave for a few hours, then preserve as for land snails. Prop the valves of mussels open by inserting matchsticks and then preserve as above. Put a label with the specimens, wrap them in cotton wool moistened with the preservative, seal in plastic bags, pack securely in a parcel and mail.

Helpers and Groups.

If you feel that you can help in this work either as a collector, or (if you live in the Melbourne area) as a data collator and recorder, please contact the National Museum of Victoria.

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Arion intermedius Normand, an Introduced Slug in Victoria

by David C. Long

Introduced European slugs have been known from Victoria for a considerable time (early references are given in Gabriel 1930:86), but only members of the family Limacidae have so far been recorded as established. The purpose of this note is to record the presence of *Arion intermedius* Normand of the family Arionidae as an established introduction in Victoria. In the field *Arion* can be distinguished from Limacid slugs by the more anteriorly placed respiratory pore on the right margin of the

mantle shield, the granular nature of the mantle shield (not concentrically ringed as in *Limax* and *Agriolimax*), the wide foot-fringe and the lack of a caudal keel.

A. intermedius is small, "about 2cm when crawling. Its colour varies from yellow to grey with the head darker grey or black and there may or may not be body and mantle bands. All these colour varieties may be found living together. *A. intermedius* is easily distinguished from the young of larger species by the form of the dorsal tubercles which stand up in little conical eminences with translucent tips when the animal contracts (Fig. lb) —hence the popular name Hedgehog Slug. . . . The sole is yellowish-grey and yellow mucus tends to accumulate at each end of it." (Quick 1961:125). In Europe it ranges from Scandinavia to the Azores, Northern Italy and Russia and has been introduced into North America, Polynesia and New Zealand. Longstaff (1912:448) records it from wild bush in New Zealand associated with the introduced snail *Oxychilus cellarius* (Müller).

In Victoria *A. intermedius* has been found in the following localities:—

Beaconsfield and Berwick—340312 (Grid reference using the 10,000 yard traverse Mercator Grid, Zone 7—Australia Series)—5.x.1969. Fairly common under rotting logs and branches in partially cleared pasture (open eucalypt forest with grassy ground layer) near Cardinia Creek.

Badger Creek—357352—30.x.1969. From wet eucalypt forest under fern trees near creek; 4 found in a bag of ground litter examined at home.

Linton Forest (2 miles E. of Linton)— —23.xi.1969. Numerous, under fallen branches on the ground in dry eucalypt forest with a grassy ground layer.

Nr. Cape Patterson—365233—4.i. 1970. About 8 specimens seen in an area about 18″ square, under long decaying grass on the sea cliffs.

San Remo—340249—17.i.1970. Few from rotting grass on the cliff face.

Its cryptic habits here are also typical of the slug in Britain. None of these localities is remote from human influence. At all sites, except Cape Patterson, *A. intermedius* was found with native molluscs, mostly small members of the superfamily Endodontacea which are awaiting full identification. They were found with the native slug *Cystopelta petterdi* Tate at Beaconsfield, Badger Creek and Linton. Introduced molluscs found in association with it were a juvenile limacid slug resembling *Lehmannia marginata* (Müller) at Berwick, and the slugs *Agriolimax reticulatus* (Müller), *Agriolimax* sp. and a limacid slug, both awaiting identification, and the zonitid snail *Oxychilus alliarius* (Müller) at Linton. Specimens of *A. intermedius* from all the above localities have been lodged with the National Museum of Victoria. The specimens

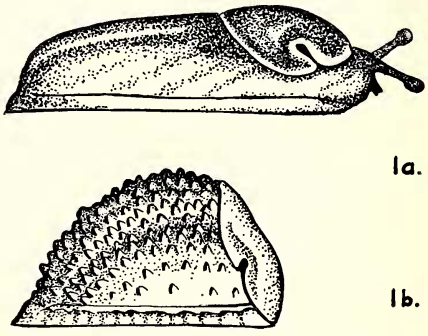

Figure 1. Drawings of *Arion intermedius* (a) crawling and (b) contracted, showing the characteristic conical eminences.

found here show a similar range of colour variation to that seen in Britain.

Cape Patterson and Linton are about 130 miles apart, so that, considering the small amount of search for this slug conducted so far, it seems to cover a fairly wide area of Victoria and is likely to be an introduction of fairly long standing. Earlier workers may have overlooked it on account of its small size and perhaps because it is not obtrusive in gardens as are many of the introduced land molluscs.

Finally, a single juvenile specimen of the genus *Arion* found by a roadside in bushland near Lyonville on 28.ix.1969 appears to be of another species, but for positive identification further material is needed. This specimen is also lodged in the National Museum of Victoria.

Acknowledgements

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